

III. REMARKS

United States Serial No. 09/560,469 was filed on April 28, 2000 with claims 1-40 inclusive. Claims 1 and 12 have been amended. New claims 47-57 have been added. Claims 4, 15, 28-40, 45, and 46 have been cancelled. In view of the amendments and remarks set forth herein, Applicants respectfully request reconsideration of the application and the issuance of a formal notice of allowance directed to claims 1, 2, 5-13, 16-27, 41-44, and 47-57.

Objection to Specification

The Examiner has requested Applicants to update the status of the parent application in the "Cross Reference to Related Applications" section of the application. Applicants have amended the application to indicate that the parent application has been abandoned. Applicants respectfully submit that the objection to the specification is now moot.

35 U.S.C. §112 Rejections

Claims 1, 2, 4-13, 15-27, and 41-44 have been rejected under 35 U.S.C. §112. Claim 1 has been amended. Support for this amendment can be found in the specification at least at page 14, lines 20-24. Applicants respectfully submit that the rejection under §112 is now moot.

35 U.S.C. §103 Rejection

Claims 1, 2, 4-13, 15-27, and 41-44 have been rejected under 35 U.S.C. §103 over United State Patent No. 5,580,532 ("US '532"), in view of JP 07-286,514 ("JP '514") and GB 1,481,133 ("GB '133").

It has been alleged that US '532 discloses a device comprising a housing, a fragile structure mounted in the housing, and a support element disposed between the housing and the fragile structure, where the support element comprises an integral, non-expanding sheet of ceramic fibers containing alumina and silica having an average diameter of 1-10 microns; that JP '514 discloses a ceramic fiber mat disposed between a catalyst and a housing, where the ceramic fibers of the mat have been heat treated at a temperature of 1000-1300°C produce a crystalline structure having 0-10% crystallinity; and that GB '133 discloses providing ceramic fibers for thermal insulation and heat treating fibers at 950°C to 1050°C from 10 minutes to 1 hour to produce fibers having a certain crystallite size.

Thus, it has been alleged that it would have been obvious to one having ordinary skill in the art to heat treat the ceramic fibers of US '532 to form fibers having a percent crystallinity as allegedly disclosed by JP '514 and a crystallite size as allegedly disclosed by GB '133.

US '532

The Office Action concedes that US '532 *does not* disclose or suggest a catalytic converter mounting mat containing ceramic fibers having the percent crystallinity or crystallite size as claimed in the present invention. Furthermore, US '532 does not provide any suggestion or motivation to manipulate the ceramic fibers to provide such crystallinity and crystallite size.

JP '514

The fibers of JP '514 are strictly limited to fiber compositions having a weight ratio of $\text{Al}_2\text{O}_3:\text{SiO}_2$ of 70:30 – 74:26. See Abstract (Pages 1 and 2); Claim 1; and Page 4, Lines 3-7. In the present application, independent claims 1, 12 and 47 recite that the aluminosilicate fibers comprise from about 40 weight percent to about 60 weight percent alumina and from about 60 weight percent to about 40 weight percent silica.

JP '514 expressly teaches that when the $\text{Al}_2\text{O}_3:\text{SiO}_2$ ratio is not in the range of 70:30 – 74:26, fiber deterioration occurs prematurely and the fibers do not withstand long usage. See Page 4, Lines 4-7. In view of the teachings of JP '514, one having ordinary skill in the art would not be motivated to utilize aluminosilicate fibers having a weight ratio of $\text{Al}_2\text{O}_3:\text{SiO}_2$ that is outside of the range of 70:30 – 74:26 in the formation of a support element for an exhaust gas treatment device. Thus, the weight ratio range of $\text{Al}_2\text{O}_3:\text{SiO}_2$ in independent claims 1, 12 and 47 is clearly outside of the weight ratio disclosed by JP '514. The JP '514 reference therefore is a clear teaching away from the present claims. See Fernando Declaration at Paragraphs 10 and 15, which are hereby fully incorporated by reference into this Response.

GB '133

GB '133 does not disclose, suggest, or provide motivation to utilize ceramic fibers in a mounting mat for exhaust gas treatment devices, such as catalytic converters and diesel particulate traps. Because GB '133 does not disclose or suggest a mounting mat for catalytic converters, it logically follows that there is no teaching or disclosure that the fibers of GB '133 exert any minimum holding pressures. GB '133 is limited to fluffy thermal insulation blankets for refractory furnace insulation. For the reasons described in the attached Declaration of Joseph A. Fernando, Ph.D., one of the inventors named on the present application, one having ordinary skill in the art would recognize that it would not be possible to manufacture an operating exhaust gas treatment device by substituting the

fluffy insulation blanket disclosed in GB '133 for the mounting mat of the claimed invention. Because of the differences in thickness, density, shot content, the insulation blanket described in GB '133 simply would not provide the requisite holding pressure to maintain the fragile catalyst support structure in place within the housing of the exhaust gas treatment device during the rigorous operating conditions of the exhaust gas treatment device. See the Fernando Declaration at Paragraphs 11-15, which are hereby fully incorporated by reference into this Response. Thus, the teaching to incorporate a mounting mat of ceramic fibers having certain percent crystallinity and crystallite size into an exhaust gas treatment device is derived only from the present application, and that the combination of GB '133 and US '532 is a result of improper hindsight analysis.

In conclusion, Applicants respectfully submit that the pending claims are allowable over the cited prior art for at least the following reasons:

--that US '532 does not disclose, suggest, or provide motivation for a mounting mat for an exhaust gas treatment device comprised of ceramic fibers having the presently claimed percent crystallinity and crystallite size;

--that JP '514 is strictly limited to the use fiber compositions having a weight ratio of $\text{Al}_2\text{O}_3:\text{SiO}_2$ of 70:30 – 74:26. and expressly teaches away from the use of fiber compositions falling outside of this range;

--that GB '133 does not disclose, suggest, or provide motivation for a mounting mat of ceramic fibers possessing the presently claimed percent crystallinity, crystallite size, or holding force performance capabilities; and

--that GB '133 does not disclose, suggest, or provide motivation for a mounting mat for an exhaust gas treatment device and therefore there is no motivation to combine GB '133 with either US '532 or JP '514.

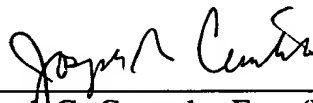
In view of the above amendments and remarks, Applicants respectfully request withdrawal of the pending objections and rejections, and further request the issuance of a formal notice of allowance directed to the pending claims.

No Additional Claims Fees Due

Applicants have previously paid for a total of 46 claims, including four (4) independent claims (1, 12, 28 and 34). A total of eleven (11) new claims, including one (1) new independent claim, have been added by the present response. Claims 4, 15, 28-40, 45, and 46 have been cancelled by the present response. Claims 3 and 14 were previously cancelled. Thus, there are nineteen (19) total claims previously paid for, but are now cancelled. Applicants respectfully submit that no additional claims fees are due at the present time. A Patent Application Fee Determination Record form is also enclosed with the present response.

Should the Examiner have any questions regarding the amendments and/or remarks presented in the present response, Applicants' undersigned attorney would welcome a telephone call.

Respectfully submitted,



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